

Ad hoc Clinical Infection & Public Health Forum

Severe Respiratory Disease associated with Novel Coronavirus

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Department of Health

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Outline

- Background on coronavirus
- Updated situation on Severe Respiratory Disease associated with Novel Coronavirus
- Risk assessment
- Department of Health's Actions in response to the updated situation

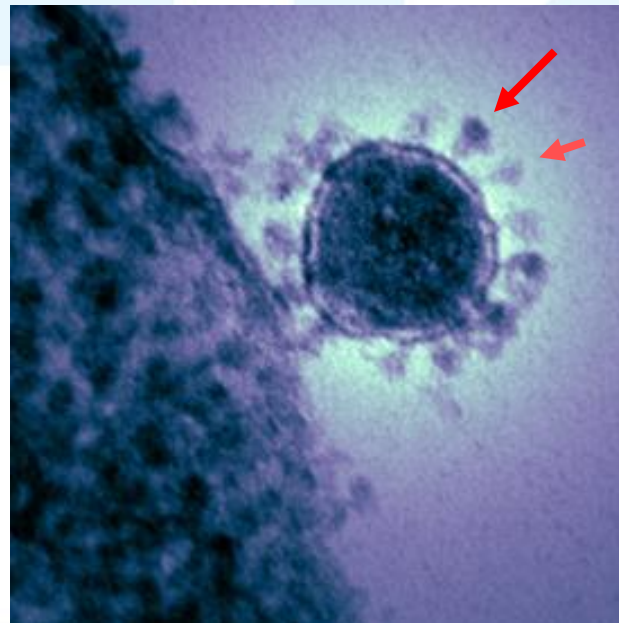


Background on coronavirus



Background

- Coronaviruses are a large family of viruses that are known to cause illness in humans and animals
- Named for the crown-like spikes on their surface



Source: National Institute of Allergy and Infectious Diseases



Background

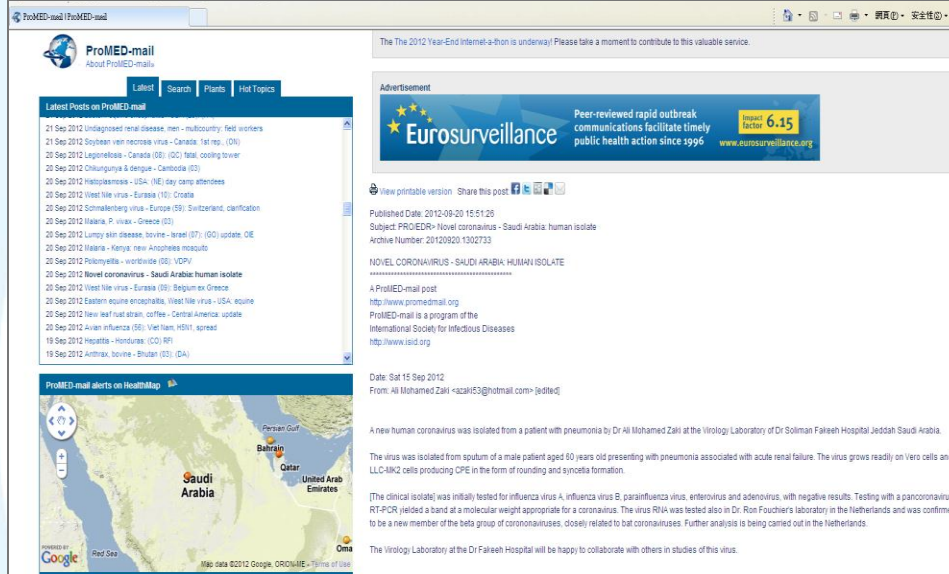
- Three main sub-groupings of coronaviruses, known as alpha, beta and gamma
- Human coronaviruses first identified in the mid 1960s
 - Five coronaviruses that can infect people are: alpha coronaviruses 229E and NL63 and beta coronaviruses OC43, HKU1, and SARS-CoV
 - Can cause illness ranging from the common cold to Severe Acute Respiratory Syndrome (SARS)
- Also infect different animals causing respiratory, gastrointestinal, liver, and neurologic diseases
 - e.g. Bat coronaviruses: HKU4, HKU5
 - Usually affect one animal species or closely related species with the exception of SARS-CoV
- Novel coronavirus (NCoV)
 - A new strain of coronavirus that has not been previously identified in humans



Updated situation of Severe Respiratory Disease associated with Novel Coronavirus



The Beginning



- 20 Sep 2012
- ProMED-mail reported that a new coronavirus isolated from a patient in the Kingdom of Saudi Arabia (KSA)

- 23 Sep 2012
- The World Health Organization (WHO) reported the first two confirmed cases of Severe Respiratory Disease associated with Novel Coronavirus



Global Situation (as of Mar 7)

- **14 confirmed cases (8 deaths)**
 - Saudi Arabia: 7 (5 deaths)
 - Jordan: 2 (2 deaths)
 - UK: 4 (1 deaths)
 - 1 patient from Qatar – receiving treatment
 - 3 patients from UK – 1 receiving treatment, 1 recovered, 1 death)
 - Germany: 1 (from Qatar – discharged)



Confirmed Cases of NCoV infection

Apr 2012 – Mar 6, 2013 (in order of **onset of disease**)

Case No.	Date of Onset	Age (years)	Sex	Probable place of infection	Date reported	Outcome	Part of a cluster	Initial Source of information
1	Apr-2012	45	F	Jordan	30/11/2012	Dead	Yes-hospital A	WHO/IHR
2	Apr-2012	25	M	Jordan	30/11/2012	Dead	Yes-hospital A	WHO/IHR
3	13/6/2012	60	M	Saudi Arabia	20/09/2012	Dead	No	ProMed/Publication
4	03/09/2012	49	M	Qatar/ Saudi Arabia	23/09/2012	Alive/ hospitalised	No-patient transferred to the UK	HPA/publication
5	10/10/2012	45	M	Saudi Arabia	04/11/2012	Alive	No	ProMed/Publication
6	12/10/2012	45	M	Qatar	23/11/2012	Alive	No-patient transferred to Germany	RKI
7	3-5/11/2012	31	M	Saudi Arabia	20/11/2012	Alive	Yes-family A	ProMed
8	28/10/2012	39	M	Saudi Arabia	23/11/2012	Dead	Yes-family A	WHO/IHR
9	Oct-2012	Adult	M	Saudi Arabia	28/11/2012	Dead	Yes-family A	WHO/IHR
10	24/1/2013	Adult	M	Pakistan/ Saudi Arabia	11/02/2013	Alive/ hospitalised	Yes-family B	HPA
11	06/02/2013	Adult	M	United Kingdom	12/02/2013	Dead	Yes-family B	HPA
12	05/02/2013	Adult	F	United Kingdom	13/02/2013	Alive/ Recovered only mild disease	Yes-family B	HPA
13	Pending	Pending	F	Pending	21/02/2013	Dead	Pending	WHO/IHR
14	Pending	69	M	Pending	6/03/2013	Dead	No	WHO/IHR

Genome of NCoV

- The complete genomes of the novel coronaviruses from the first two cases were available (GenBank)
- Phylogenetic analysis of complete coronavirus genomes
 - EMC/2012 (1st case) and England I_CoV highly similar
 - Form a distinct clade belonging to genotype 2c
 - Related to HKU4 and HKU5 bat coronaviruses
- This novel coronavirus was **different** from SARS-CoV



Risk Assessment



WHO Risk Assessment (Feb 21)

- Limited person-to-person transmission, but no sustained person to person transmission
- Encourages all Member States to continue their surveillance and testing for NCoV should be considered in patients with unexplained pneumonias, or in patients with unexplained severe, progressive or complicated respiratory illness not responding to treatment, particularly in persons traveling from or resident in areas of the world known to be affected
- Does not advise special screening at points of entry with regard to this event nor does it recommend that any travel or trade restrictions be applied



DH's Actions in response to the updated situation



Strengthened Surveillance

- “Severe Respiratory Disease associated with Novel Coronavirus” (新型冠狀病毒所致的嚴重呼吸系統病) was made **statutorily notifiable** on Sept 28, 2012
 - Report suspected cases of NCoV infection, who reside in or have history of travel to the **Arabian Peninsula or neighboring countries**
- Worked with HA and private hospitals to enhance laboratory surveillance of NCoV. **Irrespective of travel history, routine testing** will be carried out for suspected pneumonia case
- Strengthening surveillance at **borders** and refer suspected cases to HA for investigation if needed



Outbreak Investigations and Intervention

- **Letters issued to institutions** such as schools, childcare centers, elderly homes to remind them to take prevention and control measures to prevent NCoV and other respiratory diseases
- Schools and institutions are requested to **inform the Central Notification Office** (CENO) of CHP if there is any increase in respiratory illnesses or absenteeism
- CHP will undertake **epidemiological investigations** immediately upon any notification and **give advice on the management** of such cases and appropriate control measures
- **Infection control guidelines** for healthcare workers, frontline staff, schools, elderly homes and other institutions issued



Publicity and Risk Communication (I)

International

- Maintaining close contact with **WHO, HPA** and **other health authorities** to obtain the latest details of epidemiological investigation and expert advice regarding the virus

Regional

- Has been closely communicating with the **Ministry of Health of Mainland China** and the health authorities of **Guangdong** and **Macao** to monitor any possible case of NCoV infection occurring in the region
- Keeping close watch over the nearby countries and regions for their latest strategies for the disease



Publicity and Risk Communication (2)

Local

- Liaises closely with HA, private hospitals and other stakeholders on the latest development of the disease
- Letters were also issued to different sectors to keep them informed of the latest situation and strengthen surveillance, prevention and control of the disease
 - Practising doctors and private hospitals
 - Schools, ethnic minority groups
 - Chinese medicine
 - tourism industry and other institutions
- 1st Interdepartmental briefing on NCoV infection was held on Sept 26, 2012 to keep them abreast of the latest development and gear up related preparations



Publicity and Risk Communication (3)

- Scientific Committee on Emerging and Zoonotic Diseases (SCEZD) of CHP convened a meeting on Sept 28, 2012 to assess the risk and local response in light of the situation of NCoV infection and a consensus view was arrived



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Centre for Health Protection

Scientific Committee on Emerging and Zoonotic Diseases

Consensus Summary on Severe Respiratory Disease associated with Novel Coronavirus

The discovery of a novel coronavirus (human betacoronavirus 2c) associated with severe respiratory syndrome is a significant event. Presently, the virus is known to have caused a serious infection with respiratory and renal failure in two patients from the Kingdom of Saudi Arabia (KSA) and Qatar with apparently no epidemiological link to one another (the Qatar patient had stayed in KSA before illness onset).

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- # 預防新型冠狀病毒 致嚴重呼吸系統病

Guard against Severe Respiratory Disease associated with Novel Coronavirus
- ### 傳播途徑
- 主要經患者咳嗽、打噴嚏或說話時產生的飛沫
- ### 病徵
- 發燒、咳嗽和呼吸困難
- ### 預防方法
- #### 個人衛生
- 保持雙手清潔
 - 打噴嚏或咳嗽時應用紙巾掩着口鼻，將染污的紙巾妥善棄置
 - 如出現呼吸系統感染病徵，應佩戴口罩，並盡快求診
- ### Transmission
- Mainly through respiratory droplets when infected people cough, sneeze and talk
- ### Clinical features
- Fever, cough and breathing difficulties
- ### Preventive measures
- #### Personal hygiene
- Keep hands clean
 - Cover nose and mouth while sneezing or coughing with tissue paper, and dispose of soiled tissue paper properly
 - Wear surgical mask and seek medical advice promptly if respiratory symptoms develop



Centre for Health Protection

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21 February 2013

Concerted efforts in enhancing surveillance and control measures for novel coronavirus

Representatives from the Department of Health, the updated global situation of Severe Respiratory Infection, enhancing the surveillance and control measures and the HA on the issue.

The surveillance measures currently in place with Novel Coronavirus and enhanced laboratory testing for cases with unknown causes, after ruling out common respiratory viruses.

During the meeting, representatives from the health care sector, including hospital and community health workers, discussed the novel coronavirus. For cases of pneumonia with unknown causes, after ruling out common respiratory viruses, the enhanced surveillance measures will be implemented.

Speaking at a media session after the meeting, Leung Ting-hung, Director of the Department of Health, expressed concern on the latest developments of the novel coronavirus.



Department of Health

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保護市民健康
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 Department of Health
Hong Kong SAR

Feature:
Severe Respiratory Disease associated with Novel Coronavirus

LENS ON CHP

Above: An electron microscopic image of coronaviruses (Source: CDC / Dr. Fred Murphy).

3D

COMMUNICABLE DISEASES

...WATCH

Health | Social | Mgmt | Dis | Env | Res |

100 kV 2.6 | 50000x | SE | 5 | 6.0um

Severe Respiratory Disease associated with Novel Coronavirus

Reported by DR HENRY MOU, Medical Officer, and DR ALICE WONG, Senior Medical Officer, Respiratory Disease Office, Surveillance and Epidemiology Branch, CHP.

The World Health Organization (WHO) reported two patients who were confirmed to be suffering from severe respiratory disease associated with a novel coronavirus on September 23, 2012.

According to the European Centre for Disease Prevention and Control (ECDC), the first case was a 60-year-old patient in Jeddah, the Kingdom of Saudi Arabia (KSA), from whom a novel coronavirus was isolated. He was admitted to hospital on June 13, 2012 with severe pneumonia after

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Thank you



Spare slide



Current Reporting criteria for Severe Respiratory Disease associated with Novel Coronavirus (as of Jan 21)

An individual fulfilling both the **Clinical Criteria** AND **Epidemiological Criteria** should be reported to CHP for further investigation.

Clinical Criteria

A person with acute respiratory syndrome which may include fever ($\geq 38^{\circ}\text{C}$, 100.4°F) and cough

- requiring hospitalization

OR

- with suspicion of lower airway involvement (clinical or radiological evidence of consolidation) not explained by any other infection or any other aetiology

AND

Epidemiological criteria:

One or more of the followings within 10 days before onset of illness

- close physical contact* with a confirmed or probable case of novel coronavirus infection while the case was ill

OR

- Residence in or history of travel to the Arabian Peninsula or neighboring countries**

***Close contact is defined as:**

- Anyone who provided care for the patient, including a health care worker or family member, or who had other similarly close physical contact;
- Anyone who stayed at the same place (e.g. lived with, visited) as a probable or confirmed case while the case was ill.

**This refers to areas/countries bounded by Iran, Turkey and Egypt (including Iran, but not Turkey and Egypt)

References:

World Health Organization

Centers for Disease Control and Prevention (CDC): Bahrain, Iraq, Iran, Israel, Jordan, Kuwait, Lebanon, Oman, Palestinian territories, Qatar, Saudi Arabia, Syria, the United Arab Emirates (UAE), and Yemen

European Centre for Control and Prevention (ECDC): Jordan, Kuwait, Qatar, Saudi Arabia, Bahrain, Iran, Iraq, the United Arab Emirates (UAE), Oman, Yemen, Syria, Lebanon, Occupied Palestinian territories and Israel

